

1 1. In a system where a broadcast is provided across a medium having a fixed
2 bandwidth to individual home entertainment systems, a method for optimizing the use of the
3 available bandwidth by dynamically restructuring the broadcasting of channels of the medium
4 based on feedback from at least some of the home entertainment systems, the method comprising
5 the steps for:

6 generating user behavior information at a first home entertainment system that
7 indicates that the first home entertainment system is tuned to a channel broadcast across
8 the medium;

9 combining the user behavior information from the first home entertainment
10 system with user behavior information from other home entertainment systems that
11 corresponds to the channel; and

12 dynamically restructuring a broadcast of the channel based on the combined user
13 behavior information so as to optimize the use of the available bandwidth.
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15 2. A method as recited in claim 1, wherein the combined user behavior information
16 is anonymous such that the identities of the first home entertainment system and the other home
17 entertainment systems are not disclosed.

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19 3. A method as recited in claim 1, wherein said step for dynamically restructuring a
20 broadcast is performed automatically.
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1 4. A method as recited in claim 1, wherein said step for dynamically restructuring
2 comprises at least one of:

3 modifying bandwidth of the broadcast;

4 changing modulation of the broadcast;

5 changing an encoding scheme of the broadcast;

6 varying parameters of the encoding scheme of the broadcast;

7 interrupting the broadcast by allocating no bandwidth to the channel so as to
8 entirely shut off the channel;

9 redistributing the channel from a first transponder of a satellite television system
10 to a second transponder of the satellite television system; and

11 reserving a guaranteed amount of bandwidth for the broadcast.

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13 5. A method as recited in claim 1, further comprising the step for transmitting the
14 user behavior information as feedback across a back channel from the first home entertainment
15 system to a signal source, wherein the user behavior information is transmitted in one of real
16 time and a deferred basis with respect to the broadcast of the channel.

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18 6. A method as recited in claim 5, wherein a statistical analysis is performed at the
19 signal source to determine when a statistically significant number of home entertainment systems
20 have transmitted user behavior information.

1 7. A method as recited in claim 1, further comprising the step for transmitting the
2 user behavior information as feedback across a back channel from the first home entertainment
3 system to a clearinghouse system, wherein the user information is transmitted in at least one of
4 (i) real time with respect to the broadcast of the channel and (ii) on a deferred basis with respect
5 to the broadcast of the channel.

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7 8. A method as recited in claim 7, wherein the clearinghouse system performs said
8 step for combining.

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10 9. A method as recited in claim 8, wherein a statistical analysis is performed at the
11 clearinghouse system to determine when a statistically significant number of home entertainment
12 systems have transmitted user behavior information.

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14 10. A method as recited in claim 9, wherein the clearinghouse system processes the
15 combined user behavior information and forwards the results to the signal source.

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17 11. A method as recited in claim 10, wherein the processing performed at the
18 clearinghouse system comprises associating the combined user behavior information with data
19 from a data source.

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21 12. A method as recited in claim 11, wherein the data source comprises an electronic
22 programming guide that provides data as to at least one of a program and an advertisement.

1 13. A method as recited in claim 10, wherein the processing performed at the
2 clearinghouse system comprises generating a profile of at least one of the home entertainment
3 systems and the users.
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5 14. A method as recited in claim 13, wherein the profile includes the programs of the
6 broadcast to which the home entertainment systems are more frequently tuned compared to other
7 programs of the broadcast.
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9 15. A method as recited in claim 14, further comprising allocating increased
10 bandwidth to the programs more frequently tuned.
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12 16. A method as recited in claim 15, wherein the bandwidth is increased at an instant
13 in time prior to the airing of the programs more frequently tuned.
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15 17. A method as recited in claim 14, further comprising allocating increased
16 bandwidth to channels of the broadcast to which the home entertainment systems are more
17 frequently tuned.
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1 18. In a system where a broadcast is provided across a medium having a fixed
2 bandwidth and is received by one or more individual home entertainment systems, a method for
3 restructuring the broadcast based on feedback transmitted from the one or more home
4 entertainment systems across one or more potentially unreliable back channels to a clearinghouse
5 system, the method comprising the acts of:

6 receiving at the clearinghouse system user behavior information across a first
7 communication link from a first home entertainment system, wherein the user behavior
8 information indicates that the first home entertainment system tuned to a channel
9 broadcast across the medium;

10 receiving at the clearinghouse system other user behavior information across other
11 communication links from other home entertainment systems, wherein the other user
12 behavior information indicates that the other home entertainment systems tuned to the
13 channel broadcast across the medium;

14 combining at the clearinghouse system the user behavior information from the
15 first home entertainment system with the other user behavior information from the other
16 home entertainment systems; and

17 automatically restructuring a broadcast of the channel based on the combined user
18 behavior information.

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20 19. A method as recited in claim 18, wherein the first communication link and the
21 other communication links are each back channels.

1 20. A method as recited in claim 19, further comprising the act of statistically
2 determining at the clearinghouse system the reliability of the combined user behavior
3 information, wherein said act of automatically restructuring a broadcast is based on the statistical
4 determination performed at the clearinghouse system.

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6 21. A method as recited in claim 20, wherein the statistical determination performed
7 at the clearinghouse system comprises determining when a statistically significant amount of
8 user behavior information has been received to cause the broadcast to be automatically
9 restructured.

1 22. A method as recited in claim 19, wherein said act of automatically restructuring a
2 broadcast comprises at least one of:

3 modifying bandwidth of the broadcast;

4 changing modulation of the broadcast;

5 changing an encoding scheme of the broadcast;

6 varying parameters of the encoding scheme of the broadcast;

7 interrupting the broadcast by allocating no bandwidth to the channel so as to
8 entirely shut off the channel;

9 redistributing the channel from a first transponder of a satellite television system
10 to a second transponder of the satellite television system; and

11 reserving a guaranteed amount of bandwidth for the broadcast.

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13 23. A method as recited in claim 19, wherein said act of automatically restructuring a
14 broadcast comprises allocating varying amounts of bandwidth of an MPEG data stream to the
15 channel.

24. In a system where a broadcast is provided from a signal source across a medium having a fixed bandwidth and is received by one or more individual home entertainment systems, a method for optimizing the bandwidth by restructuring the broadcasting of one or more channels within the broadcast based on feedback transmitted from the one or more home entertainment systems to the signal source across one or more back channels, the method comprising the acts of:

transmitting a broadcast from a signal source to one or more home entertainment systems;

receiving at the signal source user behavior information across a first back channel from a first home entertainment system, wherein the user behavior information indicates that the first home entertainment system tuned to a channel of the broadcast, and wherein the first home entertainment system is one of the one or more home entertainment systems;

receiving at the signal source other user behavior information across other back channels from other home entertainment systems, wherein the other user behavior information indicates that the other home entertainment systems tuned to the channel of the video service, and wherein the other home entertainment systems are of the one or more home entertainment systems;

combining the user behavior information from the first home entertainment system with the other user behavior information from the other home entertainment systems; and

automatically restructuring a broadcast of the channel based on the combined user behavior information.

25. A method as recited in claim 24, wherein the user behavior information is received in real time across the first communication link with respect to a program broadcast on the channel.

26. A method as recited in claim 24, wherein the user behavior information is received on a deferred basis across the first communication link with respect to a program broadcast on the channel.

1 27. A computer program product for implementing a method for restructuring a
2 broadcast based on feedback, wherein the broadcast originates from a signal source and is
3 receivable by one or more of a plurality of home entertainment systems, the computer program
4 product comprising:

5 a computer readable medium carrying computer program code means utilized to
6 implement the method, wherein the computer program code means comprises executable
7 code for implementing the acts of:

8 receiving at a clearinghouse system user behavior information across a
9 first communication link from a first home entertainment system, wherein the user
10 behavior information indicates that the first home entertainment system tuned to a
11 channel of the broadcast;

12 receiving at the clearinghouse system other user behavior information
13 across other communication links from other home entertainment systems,
14 wherein the other user behavior information indicates that the other home
15 entertainment systems tuned to the channel of the broadcast;

16 combining the user behavior information from the first home
17 entertainment system with the other user behavior information from the other
18 home entertainment systems; and

19 automatically restructuring a broadcast of the channel based on the
20 combined user behavior information.
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1 28. A computer program product as recited in claim 27, wherein said first
2 communication link and said other communication links are each back channels.

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4 29. A computer program product as recited in claim 28, wherein the user behavior
5 information is received in real time with respect to a program broadcast on the channel.

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7 30. A computer program product as recited in claim 28, wherein the user behavior
8 information is received on a deferred basis with respect to a program broadcast on the channel.

1 31. In a system that provides a broadcast across a medium having a fixed bandwidth
2 to individual home entertainment system, a method for improving the broadcast based at least in
3 part by feedback received from one or more of the home entertainment systems, the method
4 comprising the acts of:

5 receiving a broadcast at a local signal source, wherein the broadcast is sent from a
6 central signal source;

7 transmitting the broadcast to one or ore home entertainment systems;

8 receiving at the local signal source user behavior information format least one of
9 the one or more home entertainment systems, wherein the user behavior information is
10 received across a back channel; and

11 transmitting a dynamically restructured broadcast to the one or more home
12 entertainment systems, wherein the restructured broadcast is based at least in part by the
13 user behavior information received.

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15 32. A method as recited in claim 31, wherein the broadcast is dynamically
16 restructured at the local signal source.

1 33. A method as recited in claim 32, wherein the dynamic restructuring of the
2 broadcast comprises at least one of:

3 modifying bandwidth of the broadcast;

4 changing modulation of the broadcast;

5 changing an encoding scheme of the broadcast;

6 varying parameters of the encoding scheme of the broadcast;

7 redistributing a channel from a first transponder of a satellite television system to
8 a second transponder of the satellite television system; and

9 reserving a guaranteed amount of bandwidth for the broadcast.

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11 34. A method as recited in claim 31, further comprising the acts of:

12 transmitting the user behavior information to one of the central signal source and
13 a clearinghouse system;

14 wherein said act of transmitting the user behavior information is performed before
15 said act of transmitting a dynamically restructured broadcast; and

16 receiving the dynamically restructured broadcast.
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35. A method as recited in claim 34, wherein the broadcast was dynamically
restructured by at least one of:

- a modification in bandwidth allocation;
- a change in the modulation of the broadcast;
- a change in an encoding scheme of the broadcast;
- a modification in a parameter of the encoding scheme of the broadcast;
- a redistribution of a channel from a first transponder of a satellite television
system to a second transponder of the satellite television system; and
- a reservation of a guaranteed amount of bandwidth for the broadcast